

#### REMARKS

Claims 1-22 are pending in this application. In the non-final Office action mailed February 18, 2010, the Office rejects all of the claims either for lacking novelty or for being obvious in view of U.S. patent 5,062,908 ("the Purnell et al. reference").

In this response, the Applicants explain why the rejection of the pending claims by the Office was improper and kindly request reconsideration by the Examiner.

#### Claim Rejections under 35 U.S.C. § 102(a)

The Office rejects independent claims 1 and 7, and claims 2-4 and 8-10 which depend therefrom, under 35 U.S.C. § 102(a) as being anticipated by the Purnell et al. reference.

According to MPEP § 2131, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). In the rejection of independent claims 1 and 7, the Office has failed to show that each and every element of the claim is found in the Purnell et al. reference.

In rejecting these claims, the Office states that the Purnell et al. reference discloses "placing the infiltrant blank on top of the compact." [Emphasis supplied] The only portions of the Purnell et al. reference cited in text of the rejection are col. 4, lines 35-52:

A powder blend consisting of a high compressibility iron, 0.9 wt. % of graphite, 4 wt. % of -300 mesh copper, 0.5 wt. % of a solid lubricant and 0.5 wt. % of a fugitive lubricant was pressed into cylindrical tubes

of length 43.5 mm, I.D. 6.25 mm O.D. 12.85 mm , at a pressing pressure of about 600 Mpa.

Tough pitch copper strip of thickness 0.55 mm, slit to a width of 17.7 mm was rolled to a tubular section of nominal diameter 6.25 mm. The tube was cut off to 43.5 mm lengths which were inserted into the green tubular blanks described above.

For comparison, commercially available copper base infiltrant powders were used to fill the bore of others of the green tubular blanks described above, tamping to retain the copper base powder mass in the bore.

The tubular blanks were then sintered in an atmosphere of hydrogen and nitrogen at 1100 deg. C. for 30 minutes.

This section describes the composition of the materials and recites that "Tough pitch copper strip . . . was rolled to a tubular section . . . which were inserted into the green tubular blanks described above." [Emphasis supplied by Applicants].

Notably, nowhere in the text of the Purnell et al. reference cited in the rejection is there any indication that an infiltrant blank formed from a wrought metal sheet could be placed on top of the compact.

In fact, the Purnell et al. reference itself teaches that inserting a rolled copper strip into a bore of the tube does not constitute placing an infiltrant blank on top of the compact as is required by the pending claim set. Col. 2, lines 11-34 of the Purnell et al. reference states that infiltration of long tubular components cannot be reliably infiltrated by placing a copper or copper alloy PM compact on top of the outer surface of the high-aspect ratio part to be infiltrated.

The Applicants further observe that while col. 2, lines 11-34 of the Purnell et al. reference indicate that it is common practice to place a copper or copper alloy *PM compact* on the top of an outer surface of a part to be infiltrated, that the Purnell et al. reference does not disclose placing an infiltrant blank made from a *wrought metal sheet* on top of a compact to be infiltrated as required by independent claims 1 and 7. At least one reason that a wrought metal sheet of a high purity could not be placed on top of a compact would be that if the wrought metal sheet was placed on top of the compact, upon melting, the melted wrought metal sheet is likely erode the part to be infiltrated. Further, depending on the geometry of the part, the melted infiltrant may also flow over the top edges of the part rather than infiltrating the part due to the surface tension properties of the melted infiltrant.

Thus, the Applicants assert that the independent claims 1 and 7 are patentably distinct from the Purnell et al. reference. Accordingly, the Applicants respectfully request the reconsideration and allowance of independent claims 1 and 7 by the Examiner.

Claim Rejections Under 35 U.S.C. § 103(a)

The Office also rejects independent claims 13 and 18 as being unpatentable over the Purnell et al. reference. After reviewing these rejections, the Applicants believe that the Office has failed to establish a prima facie case of obviousness and, moreover, has not clearly articulated any rationale upon which the rejections are established. See MPEP § 2142.

In making these rejections, the Office first admits that, "Purnell et al. ('908) does not disclose the claimed feature of a locating element on the infiltrant blank that is suitable for engaging a corresponding locating element on the compact" as is

required in claims 5, 11, 13, and 18. At this point in making the rejection, the burden lies with the Office to establish the elements of (1) a locating element on the infiltrant blank and (2) a corresponding locating element on the compact and then to show that these elements, once established, might be incorporated in a structure of the kind shown in the Purnell et al. reference to arrive at the claimed invention.

Having admitted these elements were lacking in the Purnell et al. reference, the Office action proceeds to state that, "It would be obvious to one of ordinary skill in the art that the end edges of the compact of Purnell et al. ('908) meet the limitation of the claimed locating element to locate the infiltrant blank onto the surface of the compact to be infiltrated accurately." However, given the admission earlier in the same paragraph that the elements as claimed are not found in the reference, it is logically inconsistent to then assert in a completely conclusory manner that one of previously admitted missing elements is actually found in the reference.

"Rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See MPEP § 2142.

Moreover, in reviewing the assertion of the Office that the elements are obviously met by the structure of the Purnell et al. reference, it is clear that the Office did not establish each and every element as claimed. The claims require "placing the infiltrant blank in contact with the [sintered] compact such that the locating element of the blank engages the corresponding locating element of the [sintered] compact." (Bracketed language found in claim 18, but not claim 13) A careful reading of the rejection indicates that only one item of the Purnell et al.

reference is asserted to be a locating element. The Office has not established a corresponding locating element as required by the claims, nor shown that the locating element and the corresponding locating element engage one another as required by the language of the claims.

Additionally, the Office has not established with any specificity whatsoever the rejections of dependent claims 6, 12, 17, and 22. These claims require that "the locating element of the blank is a section of the blank extending outwardly from a body of the blank." See, for example, the structure shown in FIG. 1 of the present application. The Office has not even attempted to establish this feature, either in the Purnell et al. reference, in another reference, or through some other contention.

The Applicants remind the Examiner that if common knowledge is relied upon in the revised rejection, then Official Notice of any facts being relied upon should be taken by the Examiner. See MPEP § 2144.03.

Accordingly, the Applicants assert that the rejections of claims 5, 6, and 11-22 under 35 U.S.C. § 103(a) are improper and should be withdrawn.

#### Conclusion

In view of the remarks above it is believed that the application is in condition for allowance. However, the Examiner is invited to contact the undersigned attorney by telephone if doing so would expedite the allowance of this application.

No fees are believed to be due at this time. However, in the event that any fees are due, including fees for an extension

of time or for excess claims, then please charge these fees to  
Deposit Account No. 17-0055.

Respectfully submitted,

Date: April 8, 2010

By:

A handwritten signature in black ink, appearing to read 'D. Ark', is written over a horizontal line.

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